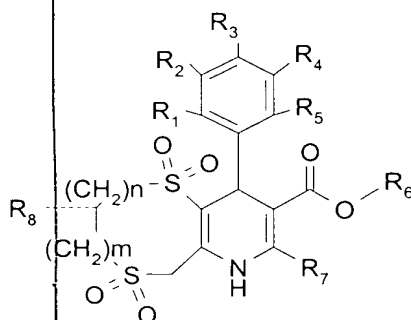


What is claimed is:

1. A compound of Formula I,



Formula I

or a pharmaceutically acceptable salt thereof, wherein

- (a) R_1 , R_2 , R_3 , R_4 and R_5 are independently selected from the group consisting of H, OH, halogen, cyano, NO_2 , alkyl, C_{1-8} alkoxy, C_{1-8} alkylsulfonyl, C_{1-4} carboalkoxy, C_{1-8} alkylthio, difluoromethoxy, difluoromethylthio, trifluoromethyl, and oxadiazole (formed by R_1 and R_2);

- (b) R_6 is selected from the group consisting of H, C_{1-5} straight or branched alkyl, aryl, 3-piperidyl, N-substituted 3-piperidyl, N-substituted 2-pyrrolidinyl methylene, and substituted alkyl, wherein

said N-substituted 3-piperidyl and said N-substituted 2-pyrrolidinyl methylene may be substituted with C_{1-8} straight or branched chain alkyl or benzyl, and said substituted alkyl may be substituted with C_{1-8} alkoxy, C_{2-8} alkanoyloxy, phenylacetyloxy, benzoyloxy, hydroxy, halogen, p-tosyloxy, mesyloxy, amino, carboalkoxy or $\text{NR}'\text{R}''$, wherein

- (i) R' and R'' are independently selected from the group consisting of H, C_{1-8} straight or branched alkyl, C_{3-7} cycloalkyl,

phenyl, benzyl, and phenethyl, or (ii) R' and R'' together form a heterocyclic ring selected from the group consisting of piperidino, pyrrolidino, morpholino, thiomorpholino, piperazino, 2-thieno, 3-thieno, and an N-substituted derivative of said heterocyclic rings, said N-substituted derivative being substituted with H, C₁₋₈ straight or branched alkyl, benzyl, benzhydryl, phenyl and/or substituted phenyl (substituted with NO₂, halogen, C₁₋₈ straight or branched chain alkyl, C₁₋₈ alkoxy and/or trifluoromethyl);

- (c) R₇ is selected from the group consisting of H, amino, alkyl, aryl, trifluoromethyl, alkoxymethyl, 2-thieno and 3-thieno;
- (d) R₈ is connected to the bis-sulfone ring via a single or double bond, as applicable, and is selected from the group consisting of H, alkylhydroxy, alkenyl, amino, phenyl, benzyl, C₁₋₈ straight or branched alkyl, trifluoromethyl, alkoxymethyl, C₃₋₇ cycloalkyl, substituted benzyl, formyl, acetyl, t-butyloxy carbonyl, propionyl, substituted alkyl and R'''CH₂C=O, wherein (i) said substituted benzyl is substituted with halogen, trifluoromethyl, C₁₋₈ straight and/or branched alkyl or C₁₋₈ alkoxy, (ii) said substituted alkyl is substituted with amino, dialkyl amino, C₁₋₈ alkoxy, hydroxy and/or halogen, and (iii) R''' is amino, dialkyl amino, C₁₋₈ alkoxy, hydroxy or halogen; and
- (e) m, n, and their sum are each an integer from 0 to 4.

2. The compound of Claim 1, wherein R₆ is -(CH₂)₂N(CH₃)CH₂PH.

3. The compound of Claim 1, wherein R₆ is methyl.

4. The compound of Claim 3, wherein R₄ is CF₃, R₅ is F, R₇ is methyl, R₈ is methylene, m is 0 and n is 1.

5. The compound of Claim 3, wherein R_4 is CF_3 , R_5 is F, R_7 is methyl, R_8 is alkylhydroxy, m is 0 and n is 1.
- 5 6. The compound of Claim 1, wherein R_7 is methyl.
7. The compound of Claim 6, wherein R_6 is $-(CH_2)_2N(CH_3)CH_2PH$.
8. The compound of Claim 6, wherein R_4 is CF_3 and R_5 is F.
- 10 9. The compound of Claim 6, wherein R_5 is Cl.
10. The compound of Claim 6 wherein R_1 is F and R_5 is Cl.
- 15 11. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
12. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-7-methyl-9-(3,4,5-trifluorophenyl)-2-[methyl(2-thienylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
- 20 13. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-6-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
- 25 14. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide, (9*R*).
- 30

15. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide, (9*S*).
16. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-6-hydroxyphenyl)-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
17. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chlorophenyl)-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
18. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
19. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-7-methyl-9-(3-nitrophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
20. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-7-methyl-9-(3,4,5-trifluorophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
21. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
22. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chloro-5-nitrophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.

23. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-7-methyl-9-(pentafluorophenyl)-methyl ester 1,1,4,4-tetraoxide.
- 5
24. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2,6-difluorophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
- 10
25. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-chlorophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
- 15
26. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
- 20
27. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
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28. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-(2,3-difluorophenyl)-2,3,6,9-tetrahydro-7-methyl-methyl ester 1,1,4,4-tetraoxide.
29. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-7-methyl-9-(2-nitrophenyl)-methyl ester 1,1,4,4-tetraoxide.
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30. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-7-methyl-3-methylene-methyl ester 1,1,4,4-tetraoxide.

31. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-7-methyl-3-methylene-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
- 5 32. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-3-(hydroxymethyl)-7-methyl-methyl ester 1,1,4,4-tetraoxide.
- 10 33. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 9-[2-fluoro-3-(trifluoromethyl)phenyl]-2,3,6,9-tetrahydro-3-(hydroxymethyl)-7-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
- 15 34. The compound of Claim 1 which is: 5*H*-1,4-Dithiepino[6,5-*b*]pyridine-8-carboxylic acid, 2,3,6,9-tetrahydro-3-(hydroxymethyl)-7-methyl-9-(3-nitrophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,4,4-tetraoxide.
- 20 35. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 3,4,7,10-tetrahydro-8-methyl-10-(3-nitrophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.
- 25 36. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 10-[2-fluoro-6-(trifluoromethyl)phenyl]-3,4,7,10-tetrahydro-8-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.
- 30 37. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 3,4,7,10-tetrahydro-8-methyl-10-(pentafluorophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.

38. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 10-[2-fluoro-3-(trifluoromethyl)phenyl]-3,4,7,10-tetrahydro-8-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.

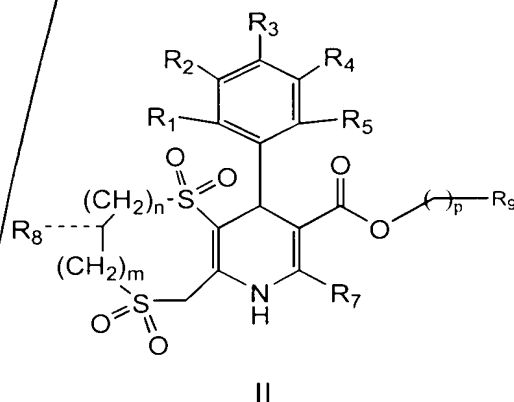
39. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 10-(2-chlorophenyl)-3,4,7,10-tetrahydro-8-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.

40. The compound of Claim 1 which is: 2*H*,6*H*-1,5-Dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 3,4,7,10-tetrahydro-8-methyl-10-(2-nitrophenyl)-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,5,5-tetraoxide.

41. The compound of Claim 1 which is: 4*H*-1,3-Dithiino[5,4-*b*]pyridine-7-carboxylic acid, 8-[2-fluoro-3-(trifluoromethyl)phenyl]-5,8-dihydro-6-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,3,3-tetraoxide.

42. The compound of Claim 1 which is: 4*H*-1,3-Dithiino[5,4-*b*]pyridine-7-carboxylic acid, 8-(2-chlorophenyl)-5,8-dihydro-6-methyl-2-[methyl(phenylmethyl)amino]ethyl ester 1,1,3,3-tetraoxide.

43. A compound of Formula (II),



or a pharmaceutically acceptable salt thereof, wherein

- 5 (a) R_1 , R_2 , R_3 , R_4 and R_5 are independently selected from the group consisting of H, OH, halogen, cyano, NO_2 , alkyl, C_{1-8} alkoxy, C_{1-8} alkylsulfonyl, C_{1-4} carboalkoxy, C_{1-8} alkylthio, difluoromethoxy, difluoromethylthio, trifluoromethyl, and oxadiazole (formed by R_1 and R_2);
- 10 (b) R_7 is selected from the group consisting of H, amino, alkyl, aryl, trifluoromethyl, alkoxymethyl, 2-thieno and 3-thieno;
- 15 (c) R_8 is connected to the bis-sulfone ring via a single or double bond, as applicable, and is selected from the group consisting of H, alkylhydroxy, alkenyl, amino, phenyl, benzyl, C_{1-8} straight or branched alkyl, trifluoromethyl, alkoxymethyl, C_{3-7} cycloalkyl, substituted benzyl, formyl, acetyl, t-butyloxy carbonyl, propionyl, substituted alkyl and $\text{R}'''\text{CH}_2\text{C}=\text{O}$, wherein (i) said substituted benzyl is substituted with halogen, trifluoromethyl, C_{1-8} straight and/or branched alkyl or C_{1-8} alkoxy, (ii) said substituted alkyl is substituted with amino, dialkyl amino, C_{1-8} alkoxy, hydroxy and/or halogen, and (iii) R''' is amino, dialkyl amino, C_{1-8} alkoxy, hydroxy or halogen;
- 20 (d) R_9 is selected from -alkyl-OH, alkylamine, lactone, cyclic carbonate, alkyl-substituted cyclic carbonate, aryl-substituted cyclic carbonate, -aryl-C(O)OR', -alkyl-aryl-C(O)OR', -alkyl-OC(O)R', -alkyl-C(O)R', -alkyl-C(O)OR', -alkyl-N(R'')C(O)R', and -alkyl-N(R'')C(O)OR', wherein
- 25

30 R^I and R^{II} are independently selected from the group consisting of hydrogen, amino, alkyl, aryl, aryl-fused cycloalkyl, and heterocyclyl, the amino, alkyl, aryl, aryl-fused cycloalkyl, and heterocyclyl being optionally substituted with halogen, cyano, NO_2 , lactone, amino, alkylamino, aryl-substituted alkylamino,

amide, carbamate, carbamoyl, cyclic carbonate, alkyl, halogen-substituted alkyl, arylalkyl, alkoxy, heterocyclyl and/or aryl (the aryl being optionally substituted with OH, halogen, cyano, NO₂, alkyl, amino, dimethylamino, alkoxy, alkylsulfonyl, C₁₋₄ carboalkoxy, alkylthio and/or trifluoromethyl);

(e) m, n, and their sum are each an integer from 0 to 4; and

(f) p is an integer from 0 to 4.

44. The compound of Claim 43, wherein R₉ is -aryl-alkyl-OC(O)R'.

45. The compound of Claim 43, wherein R₉ is -alkyl-N(R'')C(O)R'.

46. The compound of Claim 45 which is: 5H-[1,4]dithiepine[6,5-b]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-, 2-[[[(1,1-dimethylethoxy)carbonyl]amino]ethyl ester, 1,1,4,4-tetraoxide.

47. The compound of Claim 43, wherein R₉ is -alkyl-OC(O)R'.

48. The compound of Claim 47 which is: 5H-[1,4]dithiepine[6,5-b]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-, 2-[[[(1,2,3,4-tetrahydro-2-naphthalenyl)carbonyl]oxy]ethyl ester, 1,1,4,4-tetraoxide.

49. The compound of Claim 47 which is: 5H-[1,4]dithiepine[6,5-b]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-, 2-[(cycloheptylcarbonyl)oxy]ethyl ester, 1,1,4,4-tetraoxide.

50. The compound of Claim 47 which is: 5H-[1,4]dithiepine[6,5-b]pyridine-8-carboxylic acid, 9-(2-chloro-6-fluorophenyl)-2,3,6,9-tetrahydro-7-methyl-, 2-[[[4-(1-methylethoxy)benzoyl]oxy]ethyl ester, 1,1,4,4-tetraoxide.

51. The compound of Claim 47 which is: 5*H*-[1,4]dithiepine[6,5-*b*]pyridine-8-carboxylic acid, 9-(2,3-dichlorophenyl)-2,3,6,9-tetrahydro-7-methyl-, 2-(2-methyl-1-oxopropoxy)ethyl ester, 1,1,4,4-tetraoxide.

5

52. The compound of Claim 47 which is: 2*H*,6*H*-[1,5]dithiocino[3,2-*b*]pyridine-9-carboxylic acid, 10-(2-chloro-6-fluorophenyl)-3,4,7,10-tetrahydro-8-methyl-, 2-[[4-(1-methylethoxy)benzoyl]oxy]ethyl ester, 1,1,5,5-tetraoxide.

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53. A pharmaceutical composition comprising the compound of Claim 1 or 43 and a pharmaceutically acceptable carrier.

54. A method of treating a subject suffering from a disorder whose alleviation is mediated by the reduction of calcium ion influx into cells whose actions contribute to the disorder, which method comprises administering to the subject a therapeutically effective dose of the pharmaceutical composition of Claim 53.

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55. A method of inhibiting in a subject the onset of a disorder whose alleviation is mediated by the reduction of calcium ion influx into cells whose actions contribute to the disorder, which method comprises administering to the subject a prophylactically effective dose of the pharmaceutical composition of Claim 53.

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56. The method of Claim 54 or 55, wherein the disorder is selected from the group consisting of hypersensitivity, allergy, asthma, bronchospasm, dysmenorrhea, esophageal spasm, glaucoma, premature labor, a urinary tract disorder, a gastrointestinal motility disorder and a cardiovascular disorder.

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57. The method of Claim 56, wherein the disorder is asthma.

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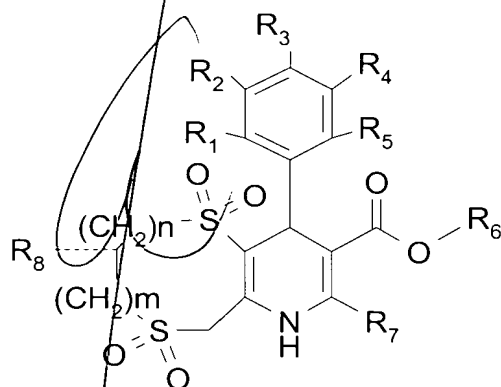
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58. The method of Claim 56, wherein the cardiovascular disorder is selected from the group consisting of hypertension, ischemia, angina, congestive heart failure, myocardial infarction and stroke.

5 59. An apparatus for administering to a subject the pharmaceutical composition of Claim 53, comprising a container and the pharmaceutical composition therein, whereby the container has a means for delivering to the subject a therapeutic and/or prophylactic dose of the pharmaceutical composition.

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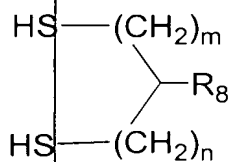
60. A process for preparing the compound of Claim 1



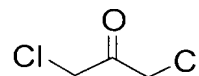
wherein m, n, and their sum are each an integer from 1 to 4, which process comprises the steps of

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(a) reacting the compound of Formula 1a with the compound of Formula 1b



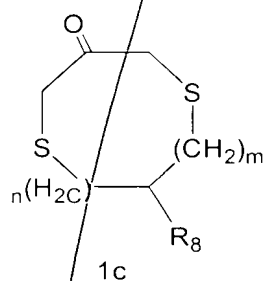
1a



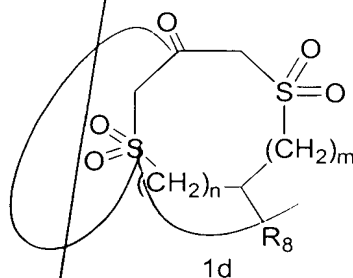
1b

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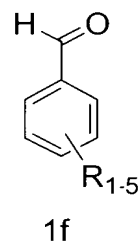
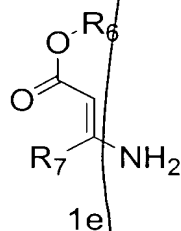
to form the compound of Formula 1c;



- (b) reacting the compound of Formula 1c with m-chloroperoxybenzoic acid to form the compound of Formula 1d; and



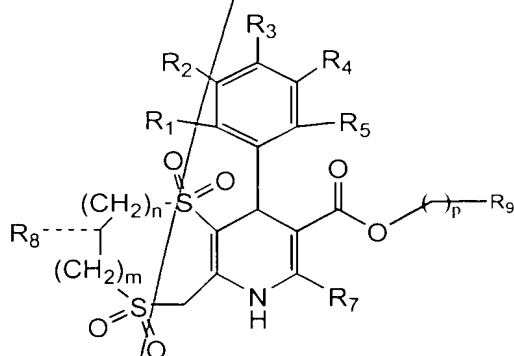
- (c) reacting the compound of Formula 1d with the compounds of Formulae 1e and 1f



to form the compound of Claim 1.

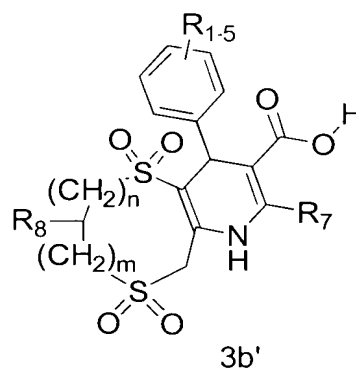
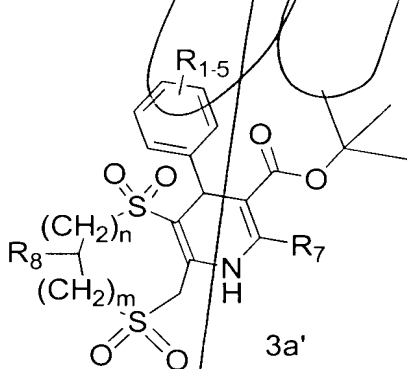
61. The process of Claim 60, wherein R_8 of the compound of Formula I is a methylene group formed from a methylol group using a dehydrating agent.

62. A process of preparing the compound of Claim 43,



which process comprises the steps of

- 5 (a) reacting the compound of Formula 3a' with formic acid to form the compound of Formula 3b'; and



- (b) reacting the compound of Formula 3b with R_9Br or R_9Cl to form the compound of Claim 43.

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63. The process of Claim 62, wherein R_7 is methyl.